

Work Order ID 50933

July 27, 2009 9:54:07 AM



Page 1

Item ID: D3688-5

Accept



Setup Start



Revision ID: B

Item Name: STUD

Stop



Start Date: 7/27/09

Start Qty: 16.00



Cust Item ID:

Required Date: 8/07/09

Req'd Qty: 16.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3688

Rev B

100

0.00



BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

DO NOT USE CHOP SAW

☐ Cut blank 12.020" long

110

0.00



DOOSAN LATHE

Doosan

Memo

0.00

Doosan Lathe

1-Turn as per Folio FA719 Rev: _____ & Dwg D3688 Rev: _____ ☐ 2-Deburr per dwg D3688

120

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

09-07-30

W/O: 50933

WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3688-5 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: A Date: 11.09.08
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
09.08.04	10 + 10	VIBRATION + STRING CHIPS CAUSE FOR UNEXCEPTABLE FINISH. (X2) RC program speed & feed.	<i>[Signature]</i> 09/08/05	REVIEW & NECESSARY REPLACE Review revise program attach	<i>[Signature]</i> 09/08/05	SD 09/08/05	<i>[Signature]</i> 09/08/05	<i>[Signature]</i> 09-08-05

NOTE: Date & initial all entries

Work Order ID 50933

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

0.00

5/10/08/01



Lathe Conv

Memo

0.00

Conventional Lathe

Face to finished length as per dwg D3688 AND center drill as per Dwg D3688

140

0.00

5/10/08/01



QC

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

Quality Control

150

0.00

5/10/08/01 09-08.04



Doosan

DOOSAN LATHE

Memo

0.00

Doosan Lathe

1- Turn as per Folio FA719 Rev: 1 & Dwg D3688 Rev: 1 □2-Deburr per dwg D3688

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Stop



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Start Date: 7/27/09 Start Qty: 16.00



Cust Item ID:

Required Date: 8/07/09 Req'd Qty: 16.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

QC2- Inspect parts off machine FAI/FAIB

0.00

SA 09/08/01

QC

Memo

0.00

09.08.04 (14)

Quality Control

170

QC8- Inspect parts - second check

0.00

SB 09/08/05

QC

Memo

0.00

(14)

Quality Control

180

PURCHASING

0.00

Purchasing

Memo

0.00

CY 09/08/11 14

Purchasing

Issue P/O: 10194 ☐ LPI Per ASTM 1417 LEVEL
2 ☐ Certificate of conformaty is required

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Item Name: STUD

Start Date: 7/27/09

Start Qty: 16.00



Cust Item ID:

Required Date: 8/07/09

Req'd Qty: 16.00



Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

CZ 07/08/11 14

Packaging

Ensure certificate of conformity is attached

200

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

09 08 11 (12)

Quality Control

210

Identify as per dwg & Stock Location: GA

0.00



Packaging

Memo

0.00

8 07/08/12 (14)

Packaging

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Req'd Qty: 16.00



Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220

QC21 - Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

C209/08/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

July 27, 2009 9:54:07 AM

Page 1 / 1

Work Order ID: 50933



Parent Item: D3688-5RevB



Parent Item Name: STUD

Start Date: 7/27/09

Required Date: 8/07/09

Comments:

Start Qty: 16.00

Required Qty: 16.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
M174PH-H900R1.000		Purchased	No			100	f	64.5000	18.3074			

17-4SS H900 ROUND BAR 1.00

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
MAT	64.5	
110213	3.3	
110750	24.99	
110990	11.87	
111055	24.34	

5'
1'
12'

Do not pick

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 50933
Description: Stud		Part Number: D3688-5
Inspection Dwg: D3688 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article**
☐ **Prototype**

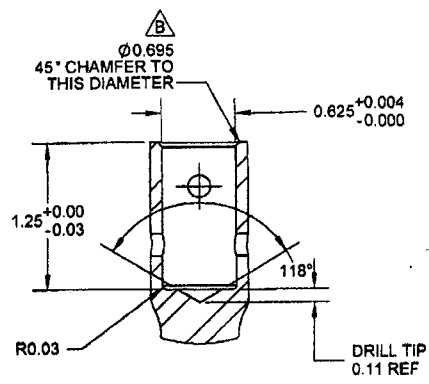
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.695	+/-0.010	Ø.7031	/			
0.625	+0.004/-0.000	.628	/			
1.25	+0.000/-0.03	1.247	/			
118°	0.5°	118°	/			
R0.03	+/-0.030	R.031	/			
0.11 Ref	+/-0.030	.11	/			
90°	0.5°	90°	/			
Ø0.189	+0.005/-0.001	Ø.189	/			
1.31	+/-0.030	1.31	/			
1.65	+/-0.030	1.65	/			
0.870	+0.000/-0.010	.868	/			
Ø0.659	+0.000/-0.015	Ø.653	/			
11.920	+/-0.015	11.923	/			
2.90	+/-0.030	2.920	/			
3/4-16UNF-2A	N/A	3/4-16	/			
0.075 x 45°	+/-0.010 x 0.5°	.07 x 45°	/			
0.370	+0.000/-0.010	.368	/			
Ø0.189	+0.005/-0.001	Ø.190	/			
R0.25	+/-0.030	R.25	/			
R0.50	+/-0.030	R.50	/			

Measured by: <i>SL</i>	Audited by: <i>SL</i>	Prototype Approval:	N/A
Date: 09/08/01	Date: 09/08/05	Date:	N/A

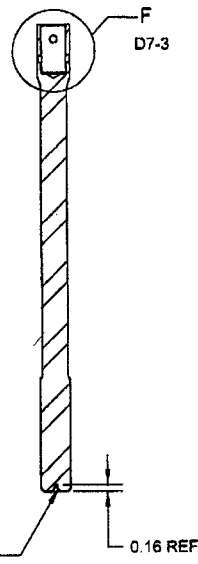
Rev	Date	Change	Revised by	Approved
A	09.05.11	New Issue	KJ <i>[Signature]</i>	AA

8 7 6 5 4 3 2 1

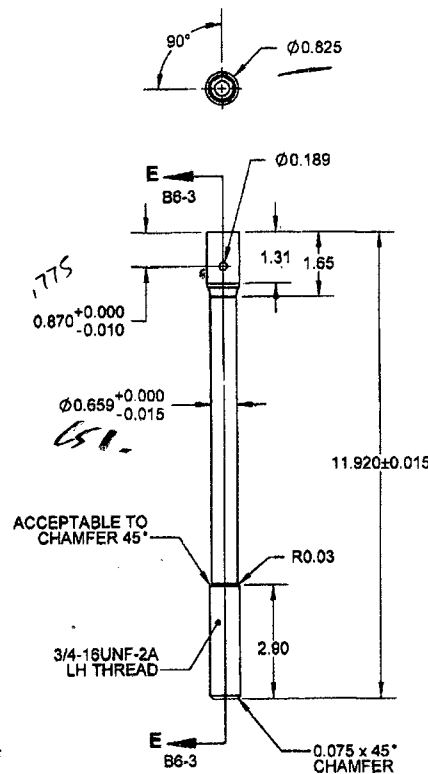
W10 50933



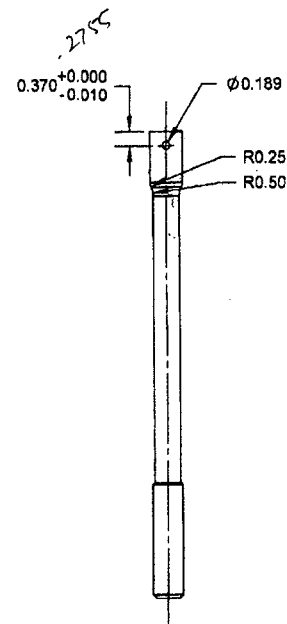
DETAIL F
SCALE 3X
D6-3



SECTION E-E
D4-3



D3688-5 STUD



MP 09/07/24
UNDER REVIEW
07/03/10
CHANCELESTOR
DRILL TO #4

RELEASE
08/12/15

- NOTES:**
- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 1.26 lb
 - 8) LPI PER ASTM 1417 LEVEL 2

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	90	DRAWING NO.	REV. B
MFG. APPR.	27	D3688	SHEET 3 OF 4
APPROVED	#	TITLE	SCALE
DE APPR.	#	STUD	NTS
DATE	08.11.24	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMBINED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



LIQUID PENETRANT TEST REPORT

P- 14945

CLIENT	<u>DART AEROSPACE</u>	DATE	<u>AUG-10-2009</u>	PAGE	<u>1</u>	OF	<u>1</u>
ATTENTION	<u>LINDA CHANTAL</u>	ACUREN JOB NO.	<u>188-09-001484</u>	TIME	AM <input checked="" type="checkbox"/>	PM <input type="checkbox"/>	
ADDRESS	<u>1270 ABERDEEN ST.</u>	PO/NO.	<u>10194</u>				
	<u>HAWKESBURY ON. K6H-1K7</u>	WORK LOCATION	<u>HAWKESBURY</u>				
PROJECT	<u>F.P.I. ON MACHINED PARTS - AND CROSS TUBES</u>	ACCEPTANCE STD.	<u>ASIM 1417</u>	REV./DATE	<u>2007</u>		
ITEM(S) EXAMINED	<u>44 STUDS. 20 RAPPELS</u>						
	<u>7 CROSS TUBES. + 12 STUDS.</u>						

JOB DESCRIPTION	PROCEDURE NO. <u>LT-0002</u>	REV./DATE	TECHNIQUE NO. <u>LT-TECH-2</u>	REV./DATE
PART NO.	MATERIAL <u>STAINLESS STEEL</u>	THICKNESS	<u>ALUMINE ALUMINUM</u>	
SCOPE	<u>WET FLOUORESCENT LIQUID PENETRANT INSPECTION</u>			
	<u>CARRIED OUT 100% EXTERNAL</u>			

TEST DETAILS	
METHOD <input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH <input type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND <u>MAGNAFLUX</u>	BLACK LIGHT S/N <u>16459</u> <input checked="" type="checkbox"/> OUTPUT > 1000 μ W/cm ² <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT <u>2L 67</u> MINIMUM DWELL TIME <u>45</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER <u>H2O</u> MINIMUM DRY TIME <u>>10</u> MIN.	OTHER <u>LABINO</u>
DEVELOPER <u>SKD 52</u> MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N
DEVELOPER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY	CAL DUE DATE <u>DEC 8 - 2009</u>

TEST SURFACE	
SURFACE CONDITION <input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input type="checkbox"/> CLEAN BARE METAL	
SURFACE TEMPERATURE <input type="checkbox"/> < -4°C/ 20°F <input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F <input type="checkbox"/> 10°C/50°F TO 52°C/125°F <input type="checkbox"/> > 52°C/125°F	

RESULTS- <input type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL																																								
<table border="1"><thead><tr><th>QCM#</th><th>ACCEPT</th><th>REJECT</th></tr></thead><tbody><tr><td>14 PCS STUDS - W.O. 509 33</td><td>✓</td><td></td></tr><tr><td>30 PCS STUDS - W.O. 507 21</td><td>✓</td><td>24 X 0</td></tr><tr><td>12 PCS STUDS - W.O. 509 32</td><td>✓</td><td></td></tr><tr><td>10 PCS RAPEL - W.O. 509 67</td><td>✓</td><td></td></tr><tr><td>10 PCS RAPEL - W.O. 509 68</td><td>✓</td><td>5 X 5</td></tr><tr><td>1 CROSS TUBE - W.O. 510 83</td><td>✓</td><td></td></tr><tr><td>1 CROSS TUBE - W.O. 510 84</td><td>✓</td><td></td></tr><tr><td>1 CROSS TUBE - W.O. 510 85</td><td>✓</td><td></td></tr><tr><td>1 CROSS TUBE - W.O. 508 73</td><td>✓</td><td></td></tr><tr><td>1 CROSS TUBE - W.O. 508 27</td><td>✓</td><td></td></tr><tr><td>1 CROSS TUBE - W.O. 508 00</td><td>✓</td><td></td></tr><tr><td>1 CROSS TUBE - W.O. 508 26</td><td>✓</td><td></td></tr></tbody></table>	QCM#	ACCEPT	REJECT	14 PCS STUDS - W.O. 509 33	✓		30 PCS STUDS - W.O. 507 21	✓	24 X 0	12 PCS STUDS - W.O. 509 32	✓		10 PCS RAPEL - W.O. 509 67	✓		10 PCS RAPEL - W.O. 509 68	✓	5 X 5	1 CROSS TUBE - W.O. 510 83	✓		1 CROSS TUBE - W.O. 510 84	✓		1 CROSS TUBE - W.O. 510 85	✓		1 CROSS TUBE - W.O. 508 73	✓		1 CROSS TUBE - W.O. 508 27	✓		1 CROSS TUBE - W.O. 508 00	✓		1 CROSS TUBE - W.O. 508 26	✓		<p><u>MM 09 08 11</u></p> <p><u>TO BUFF AND EXAMINE - INDICATION</u></p> <p><u>TO BUFF AND EXAMINE - INDICATIONS</u></p> <p><u>6 ITEMS TO EXAMINE AFTER BUFFING</u></p> <p><u>OTHER PCS FOUND ACCEPTABLE TO STANDARD</u></p>
QCM#	ACCEPT	REJECT																																						
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1 CROSS TUBE - W.O. 508 00	✓																																							
1 CROSS TUBE - W.O. 508 26	✓																																							

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES	
CLIENT REPRESENTATIVE <u>Chantal Lavoie</u>	TECHNICIAN (SIGNATURE): <u>Mike Johnston</u>
NAME (PRINT): <u>Chantal Lavoie</u>	NAME (PRINT): <u>Mike Johnston</u>
CGSB LEVEL <u>2</u> SNT LEVEL <u>6066</u>	CGSB LEVEL <u>2</u> SNT LEVEL <u>6066</u>
CGSB REG. No. <u>6066</u>	CGSB REG. No. <u>6066</u>
DTR # <u>E-20068</u>	
REPORT REVIEWED BY: <u>NAME</u> <u>INITIALS</u>	